Dalton Utilities

Composted Biosolids Monitoring Plan and Sampling Protocol

Revised January 2010

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Executive Summary

Dalton Utilities, located in Dalton, Georgia, operates water treatment, wastewater treatment, natural gas, electric, and telecommunication systems that serve residents in the City of Dalton in addition to residents in Whitfield, Murray, Gordon, and Catoosa Counties.

Dalton Utilities wastewater operations is comprised of approximately 295 miles of pipe, 5,544 manholes, and 35 lift stations in the wastewater collection system, five wastewater treatment facilities, and 9,800 Land Application System (LAS). The largest three wastewater treatment plants (WWTP), Abutment WWTP, Riverbend WWTP, and Loopers WWTP are part of Dalton Utilities Land Application System (LAS) which is a non-discharging system.

These three WWTPs take wastewater from local industries and the residents of the City of Dalton and parts of Whitfield County and process the wastewater utilizing biological treatment. The treated wastewater or effluent is then transported to the canal or reservoir located at the LAS. The effluent flows through the canal system to the pump stations where the effluent is chlorinated and then pumped to various sprayfields. The effluent is distributed via underground piping and sprayed using impact sprinklers onto the land where the effluent infiltrates the soil surface and subsurface providing additional treatment.

In May 2009, Dalton Utilities collected samples at various locations on the LAS for the analyses of perfluoridated chemicals (PFCs). In response to these sample results, Dalton Utilities began investigating its operations and specifically, the composting operation and subsequent distribution of finished compost.

This protocol is to be followed for the sampling of Dalton Utilities on-site inventory of compost denoted in Dalton Utilities August 5, 2009, correspondence to Mr. Mike Hom, US EPA. At the time of that correspondence, the compost inventory on-site had aged approximately six (6), twelve (12), and eighteen (18) months. After collection, the samples will be analyzed by a contract laboratory to determine the levels of perfluoridated chemicals (PFCs) present in the compost.

Dalton Utilities Biosolids Monitoring Sampling Protocol

1. Identification of Sample Locations

   Biosolids are generated as part of the wastewater treatment process. The biosolids generated by Dalton Utilities are transported to an on-site biosolids handling facility where the biosolids are dewatered via centrifuges and then mixed with wood waste to achieve the desired consistency and carbon to nitrogen ratio for composting. The resulting compost is stored on-site in static piles and continues to cure until it is ready to be screened. It is then sold or given away through a third party agreement.

   The on-site inventory of compost was segregated in accordance with the Clean Water Act (CWA) Section 308 letter from Mr. James Giattina, EPA, to Dalton Utilities dated October 6, 2009. All the compost noted to be aged approximately 6, 12, and 18 months in Dalton Utilities August 5, 2009, correspondence to Mr. Mike Hom, US EPA, has been segregated into separate locations. Each of the three groups of different age compost has been selected to be sampled.

2. Sample Collection

   Dalton Utilities will collect the compost samples from each of the three different aged lots of compost. The sampling will be performed by qualified personnel with experience in the field and be conducted in accordance with Region 4 of the United States Environmental Protection Division (EPA) Science and Ecosystem Support Division's Soil Sampling Procedure (SESDPROC-300-R1) and in accordance with the Clean Water Act (CWA) Section 308 letter from Mr. James Giattina, EPA, to Dalton Utilities dated October 6, 2009.

   Two composite samples of the three different aged lots on-site will be sampled three (3) times at four (4) month intervals. If the inventory of compost is thermally treated in a manner as to reduce the potential impact of PFCs to a level below the published health advisory as demonstrated through a modified Toxicity Characteristic Leaching Potential (TCLP) test, the treated compost would be excluded from this protocol.

   The sample collection will be conducted as follows:

   a. A composite sample of finished compost consisting of 10 equal aliquots based on a "simple random sampling approach" in which the finished compost pile is divided into a 10 x 10 grid and 10 discrete surface grab aliquots randomly collected at different grid locations will be collected. The sub-samples will be collected manually utilizing a stainless steel spoon and/or small hand shovel. Any humus or roots present at or near

the surface will be removed prior to the sample collection although this material is unlikely to be present on the compost piles.

b. The individual aliquots or sub-samples will be placed together in a stainless steel bowl and stirred utilizing the stainless steel spoon to homogenize the sample. To allow for adequate sample mixing, the sample will be stirred in a circular manner, reversing direction, and turning the sample material over occasionally.
c. After adequate mixing, the sample will be placed in the appropriate container provided to Dalton Utilities by the contract laboratory and labeled as to the location of the sample collection.
d. The sample container will then be placed on ice in a cooler to be transported to the contract laboratory for analyses.
e. Latitudes and longitudes, as collected using Global Positioning System (GPS) equipment, will be obtained for the sample location.
f. All instrumentation utilized in the sample collection will be decontaminated in accordance with the draft procedures outlined in the US EPA Region 4 Science and Ecosystem Division's Recommended Decontamination Procedure of Equipment used for Sample Collection for Perfluorinated Compound Analysis dated September 8, 2009, in between the sample collections. The decontamination process will be conducted as follows:
    i. All instrumentation utilized in the sample collection will be cleaned with Alconox and water.
    ii. Following cleaning, the equipment will be rinsed with tap water and then de-ionized water.
    iii. As this procedure is to be conducted in the field and not in a controlled laboratory with a chemical fume hood, isopropyl alcohol will be used in lieu of methanol to triple rinse the equipment after the de-ionized water rinse. The appropriate documentation to demonstrate the effectiveness of this substitution will be maintained.
    iv. The equipment will then be placed on a clean surface and allowed to air dry or be properly stored.

3. Sample Identification, Labeling, Chain of Custody, and Recordkeeping

For simplicity, the sample containers will be labeled appropriately as to the location where the sample was collected.

The sample container labels will correspond directly with the Chain of Custody. The individual collecting the sample will fill out the Chain of Custody appropriately and relinquish the samples to the contract laboratory via the signature on the Chain of Custody. An example Chain of Custody is attached herein as Attachment A.

All records pertaining to this project will be maintained by Dalton Utilities.

4. Quality Control

As two samples of each location will be collected as part of this project, no further duplicate samples are necessary. Additionally, with the small scope of this project, no field blanks, trip blanks, or equipment blanks will be collected.

Quality control of the laboratory analyses will be conducted in accordance with the contract laboratory's QC program and procedures and will include laboratory duplicates and matrix spikes.

5. Shipment of Samples

The samples will be placed in the appropriately labeled containers with the completed Chain of Custody and shipped in an insulated container with ice via an overnight courier to the contact laboratory for analyses.

6. Sample Analyses

The samples collected as a part of this study will be analyzed for the list of compounds indicated in Attachment B. At the time of the development of this protocol, the selected contract laboratory did not have standards and/or validated methods developed for the additional perfluoridated chemicals (PFCs) noted in the Clean Water Act (CWA) Section 308 letter from Mr. James Giattina, EPA, to Dalton Utilities dated October 6, 2009. As such, the list of compounds indicated in Attachment B reflects the full current analytical capabilities of the contract laboratory with respect to PFCs.

The concentrations of these chemicals will be determined utilizing the contract laboratory's method for analyses. The method will be provided to Dalton Utilities by the contract laboratory in the subsequent analytical report.

7. Schedule

The sampling events delineated herein will be initiated no later than 30 days after Dalton Utilities receives EPA's approval of this plan. Samples will be collected at approximately four month intervals. The sampling may be discontinued or the schedule adjusted if the compost is thermally treated.

8. Reporting

The analytical report for this project will be provided to Dalton Utilities upon completion and verification of the analyses by the contract laboratory. Dalton Utilities will submit the analytical sample results to EPA within 5 days of receipt of the final analytical report in accordance with the Clean Water Act (CWA)

Section 308 letter from Mr. James Giattina, EPA, to Dalton Utilities dated October 6, 2009. Additionally, a full report including all analytical results will be provided to EPA once all the final analytical results are received.

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

Test America

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (1007)

Client: Client Name

Project Manager: Your Field Rep or Project Manager

Date: Date of Sampling

Chain of Custody Number: 104321

Address: Client Address

Telephone Number (Area Code)/Fax Number: Same As Above

Lab Number

Page _____ of _____

City | State | Zip Code

Site Contact

Lab Contact: Your T.A. Project MGR

Project Name and Location (State): ABC Landfill - Denver, CO

Carrier/Waybill Number

Contract/Purchase Order/Quote No.: Quote # 12345

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: BoD	TSS, TDS	Oil & Grease	Total Metals	8260 VOA	Cyanide	Sulfide	Flash point	% Moisture
MW-1	8/20/08	0930		X			3	2	1	3	1	1	X	X	X	X	X	X	X		
MW-2	8/20/08	1055		X					1	3						X	X				
MW-3	8/20/08	1345				X	3									X	X			X	X

Special Instructions/ Conditions of Receip

* Any Special Information y May want the Lab to know

Examples:
- MS/MSD
- High in PCBs
- Limited Volum

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STD

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Sign Here to Identify Sample Transfer			1. Received By: We Sign Here upon Arrival		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: Shipped VIA FEDEX Priority Overnight

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Attachment A

Attachment D to January 13, 2009 letter to Ms. Mitchell

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Attachment B

List of Perfluoridated Compounds (PFC) for Chemical Analyses

As Revised June 17, 2009, by EPA

Compound	Acronym
Perfluorobutanoic acid	C4
Perfluoropentanoic acid	C5
Perfluorohexanoic acid	C6
Perfluoroheptanoic acid	C7
Perfluorooctanoic acid	C8
Perfluorononanoic acid	C9
Perfluorodecanoic acid	C10
Perfluoroundecanoic acid	C11
Perfluorododecanoic acid	C12
Perfluorotridecanoic acid	C13
Perfluorotetradecanoic acid	C14
Perfluorobutane sulfonate	PFBS
Perfluorohexane sulfonate	PFHxS
Perfluorooctane sulfonate	PFOS
Perfluoroctane sulfonamide	PFOSA